

**What is claimed is:**

1. An apparatus, comprising:  
a unit inputting a part of a plurality of input  
5 optical signals, outputting a part of a plurality of  
output optical signals, and isolating the part of a  
plurality of input optical signals and the output  
optical signals so as to switch and connect.
- 10 2. The apparatus according to claim 1, further  
comprising:  
a wavelength demultiplexing unit demultiplexing  
an input wavelength-multiplexed signal into optical  
signals having a single wavelength; and  
15 a wavelength multiplexing unit multiplexing the  
signals having the single wavelengths, which are  
switched and connected by said unit, into a  
wavelength-multiplexed signal.
- 20 3. The apparatus according to claim 3, wherein  
said unit, to which optical signals are input,  
makes switching and connection in units of optical  
signals.
- 25 4. The apparatus according to claim 1, further

comprising:

an electro-optic converting unit converting an electric signal into an optical signal; and

an opto-electric converting unit converting an optical signal into an electric signal, wherein said unit switches and connects the electric signals.

5. The apparatus according to claim 1, further comprising:

10 an electro-optic converting unit converting an electric signal into an optical signal; and

an opto-electric converting unit converting an optical signal into an electric signal,

wherein said unit comprises at least one optical switch unit and at least one electric switch unit, both of which independently switch input signals to output signals, and

wherein said opto-electric converting unit inputs an electric signal to said electric switch unit and said electro-optic converting unit receives an electric signal from said electric switch unit and outputs an optical signal.

6. The apparatus according to claim 1, wherein at least some of a plurality of units make

switching and connection in units of wavelength-multiplexed signals.

7. The apparatus according to claim 1, wherein  
5 at least some of a plurality of units are through units which pass signals through unchanged without switching and connecting the signals.

8. The apparatus according to claim 1, further  
10 comprising:

a distribution switch unit distributing signals to any of a plurality of units; and

a selection switch unit selects and outputs signals output from the plurality of units.  
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9. The apparatus according to claim 1, comprising

a plurality of optical ADMs, wherein a dropped signal from the optical ADMs is input to said unit, and  
20 an output from said unit is added to the optical ADMs.

10. A signal switching and connection method for use in an optical node device having pluralities of signal inputs and outputs, comprising:

25 (a) inputting some of all of signals that can be

input to the optical node device; and

(b) switching, connecting, and outputting some of all of signals that can be output from the optical node device, wherein

5 all of the signals are switched and connected as a non-complete group switch by performing (a) and (b) for all of the signals input to the optical node device.

11. The signal switching and connection method  
10 according to claim 10, wherein

some of all of the signals input to the optical node device are passed through without being switched and connected.

12. The signal switching and connection method  
15 according to claim 10, wherein

some of all of the signals input to the optical node device are switched and connected in units of wavelength-multiplexed signals.

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13. The signal switching and connection method according to claim 10, further comprising:

(c) passing others of all of the signals input to the optical node device through without switching and  
25 connecting the others of all of the signals:

(d) switching and connecting still others of all of the signals input to the optical node device in units of wavelength-multiplexed signals; and

(e) selecting any of (b), (c), and (d) for all of  
5 the signals input to the optical node device.

14. The signal switching and connection method according to claim 10, wherein

a signal for which the switching and connection  
10 are made is selected by an optical ADM.